



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

November 18, 2013

MEMORANDUM

SUBJECT: Contract Laboratory Program Data Review
FROM: *Raymond Flores*
Raymond Flores, Alternate ESAT Regional Project Officer
Environmental Services Branch (6MD-HL)
TO: Brian Mueller, Superfund Project Manager (6SF-RL)

Site: FALCON REFINERY
Case#: 43795
SDG#: MF2B16

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.

ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6
10625 Fallstone Road
Houston, TX 77099

Alion Science and Technology

MEMORANDUM

DATE: November 14, 2013
TO: Marvelyn Humphrey, ESAT PO, Region 6 EPA
FROM: Linda Hoffman, Data Reviewer, ESAT
THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT *NGJ*
SUBJECT: CLP Data Review

Contract No.:	EP-W-06-030
TO No.:	030
Task/Sub-Task:	2-12
ESAT Doc. No.:	B030-212-0178
TDF No.:	6-12-022C
ESAT File No.:	I-0643

Attached is the data review summary for Case # 43795

SDG #	MF2B16
Site	Falcon Refinery

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	43795	SITE	Falcon Refinery
LABORATORY	MITKEM	NO. OF SAMPLES	2
CONTRACT#	EP-W-09-039	MATRIX	Soil
SDG#	MF2B16	REVIEWER (IF NOT ESB)	ESAT
SOW#	ISM01.3	REVIEWER'S NAME	Linda Hoffman
SF#	303DD2MC	COMPLETION DATE	November 14, 2013

SAMPLE NO.	MF2B16				
	MF2B17				

DATA ASSESSMENT SUMMARY

	ICP	HG
1. HOLDING TIMES	<u>O</u>	<u>O</u>
2. CALIBRATIONS	<u>O</u>	<u>O</u>
3. BLANKS	<u>O</u>	<u>O</u>
4. MATRIX SPIKES	<u>M</u>	<u>O</u>
5. DUPLICATE ANALYSIS	<u>M</u>	<u>O</u>
6. ICP QC	<u>M</u>	
7. LCS	<u>O</u>	
8. SAMPLE VERIFICATION	<u>O</u>	<u>O</u>
9. OTHER QC	<u>N/A</u>	<u>N/A</u>
10. OVERALL ASSESSMENT	<u>M</u>	<u>O</u>

O = Data had no problems.

M = Data qualified due to major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN: The antimony and barium matrix spike recoveries were below the QC limits. Laboratory duplicate differences exceeded the expanded QC limit for soils for barium, calcium, chromium, and nickel. The arsenic and chromium serial dilution differences exceeded the expanded QC limit for soils.

**COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW**

CASE 43795 SDG MF2B16 SITE Falcon Refinery LAB MITKEM

COMMENTS: This SDG consisted of two soil samples for total metals (by ICP-MS and ICP-AES) and mercury analyses following SOW ISM01.3. A sample was not designated for laboratory QC analyses, so after contacting SMO, the laboratory performed QC analyses on sample MF2B16.

The SOW requires that the soil sample results be adjusted for moisture content. The adjusted CRQLs were reported by the laboratory and are referred to as SQLs in this report.

All samples for ICP-MS were analyzed at 5X dilution only. The laboratory managed to meet the CRQL requirement by lowering the concentration for the low initial calibration standard to 1/5 the CRQLs specified in the SOW. Additionally, the laboratory diluted 3X and reanalyzed sample MF2B16 because of a high calcium concentration.

S3VEM Review was performed for this package as requested by the Region. For this review option, laboratory contractual compliance and technical usability of the sample results are primarily determined by the EDM CCS Defect Report and NFG Data Review Results Report, respectively. The reviewer performs supplemental hardcopy forms checking and applies Region 6 guidelines, where necessary, to account for known limitations of the electronic review process. Therefore, the reviewer's final assessments may deviate from those found in the EDM reports. The NFG Data Review Results Report for the SDG is attached to this report as an addendum for additional information.

OVERALL ASSESSMENT: Some results were qualified for both samples because of problems with matrix spike recoveries, laboratory duplicate differences, and serial dilution differences. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist. The DST included in this report is the final version.

INORGANIC ACRONYMS

CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CN	Cyanide
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DST	Data Summary Table
EDM	EXES Data Manager
HG	Mercury
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICP-AES	Inductively Coupled Plasma-Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IS	Internal Standard
LCS	Laboratory Control Sample
MDL	Method Detection Limit
NFG	National Functional Guidelines
PE	Performance Evaluation
%D	Percent Difference
%R	Percent Recovery
%RI	Percent Relative Intensity
%RSD	Percent Relative Standard Deviation
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RPD	Relative Percent Difference
RSCC	Regional Sample Control Center
S3VEM	Stage 3 Validation Electronic and Manual (previously called Modified CADRE Review)
S4VEM	Stage 4 Validation Electronic and Manual (previously called Standard Review)
SDG	Sample Delivery Group
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
TAL	Target Analyte List

HEADER DEFINITIONS FOR INORGANIC EXCEL DST

CASE: Case Number
SDG: SDG Number
EPASAMP: EPA Sample Number
LABID: Laboratory File/Sample ID
MATRIX: Sample Matrix
QCCOD: Sample QC Code
SMPQUAL: Sample Qualifier
ANDATE: Sample Analysis Date
ANTIME: Sample Analysis Time
CASNUM: Compound CAS Number
ANALYTE: Compound Name
CONC: Compound Concentration
VALDQAL: Region 6 Inorganic Data Validation Qualifier (see
Inorganic Data Qualifier Definitions on the next page)
UNITS: Concentration Units
ADJCRQL: Adjusted Contract Required Quantitation Limit Value
SMPDATE: Sampling Date
PRPDATE: Sample Preparation Date
LRDATE: Laboratory Receipt Date
LEVEL: Sample Level
PERSOLD: Sample Percent Solids
SMPWTVL: Sample Weight (Soil Samples)/Initial Sample Volume (Water
Samples)
FINLVOL: Final Sample Volume
METHOD: Method of Analysis
STATLOC: Station Location

Disclaimer: ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, ADJCRQL, VALDQAL, and PERSOLD. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

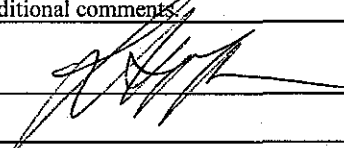
- U Not detected at reported quantitation limit.
- L Reported concentration is between the MDL and the CRQL.
- J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, etc., or the result is below the CRQL.
- R Result is unusable.
- F A possibility of a false negative exists.
- UC Reported concentration should be used as a raised quantitation limit because of blank effects and/or laboratory or field contamination.
- + High biased. Actual concentration may be lower than the concentration reported.
- Low biased. Actual concentration may be higher than the concentration reported.
- W The result should be used with caution. The result was reported on a dry weight basis although the sample did not conform to the EPA Office of Water definition of a soil sample because of its high water content (>70% moisture).

CASE	SDG	EPASAMP	LABID	MATRIX	QCCODE	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	PRPDATE	LRDATE	LEVEL	PERSOLD	SMPWTVL	FINVOL	METHOD	STATLOC
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7429805	Aluminum	2880		mg/kg	17.7	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440360	Antimony	0.97	UJ	mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440382	Arsenic	0.64	J	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440393	Barium	121	J	mg/kg	4.9	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440417	Beryllium	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440439	Cadmium	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/01/2013	12:10:45	7440702	Calcium	61000	J	mg/kg	1330	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440473	Chromium	4.4	J	mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440484	Cobalt	1.3		mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440508	Copper	2.5		mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7439896	Iron	1720		mg/kg	8.8	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7439821	Lead	6.7		mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7439854	Magnesium	954		mg/kg	442	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7439865	Manganese	36.3		mg/kg	1.3	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/04/2013	10:19:51	7439976	Mercury	0.0046	LJ	mg/kg	0.095	09/14/2013	10/03/2013	09/17/2013	Low	95.9	0.55	100	CV	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440020	Nickel	3.0	J	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7440097	Potassium	550		mg/kg	442	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7782492	Selenium	2.4	U	mg/kg	2.4	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440224	Silver	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7440235	Sodium	442	U	mg/kg	442	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440280	Thallium	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440622	Vanadium	7.2		mg/kg	2.4	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440666	Zinc	9.2		mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7429905	Aluminum	1120		mg/kg	18.6	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440360	Antimony	0.79	UJ	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440382	Arsenic	0.40	UJ	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440393	Barium	4.0	UJ	mg/kg	4.0	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440417	Beryllium	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440439	Cadmium	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7440702	Calcium	464	UJ	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440473	Chromium	0.36	LJ	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440484	Cobalt	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440508	Copper	0.79	U	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7439896	Iron	265		mg/kg	9.3	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7439821	Lead	1.7		mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7439854	Magnesium	40.7	LJ	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7439865	Manganese	3.3		mg/kg	1.4	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/04/2013	10:24:16	7439976	Mercury	0.011	LJ	mg/kg	0.098	09/14/2013	10/03/2013	09/17/2013	Low	96.1	0.53	100	CV	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440020	Nickel	0.40	UJ	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7440097	Potassium	464	U	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7782492	Selenium	2.0	U	mg/kg	2.0	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440224	Silver	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7440235	Sodium	464	U	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440280	Thallium	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440622	Vanadium	2.0	U	mg/kg	2.0	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440666	Zinc	0.31	LJ	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. <u>43795</u>	SDG No. <u>MF2B16</u>	SDG Nos. To Follow	Mod. Ref. No.	Date Rec <u>10/22/13</u>
EPA Lab ID: <u>MITKEM</u>			ORIGINALS	
Lab location: <u>N. Kingstown, RI</u>			CUSTODY SEALS	
Region: <u>6</u> Audit No.: <u>43795/MF2B16</u>			1. Present on package? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Resubmitted CSF? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			2. Intact upon receipt? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
Box No(s): <u>1</u>			FORM DC-2	
COMMENTS: Item Description 18./18a. The COC Record and airbill were photocopies but the location of the original documents was not indicated. The auditor located the original documents in SDG MF2A85 and recorded the missing information on the photocopies.			3. Numbering scheme accurate? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			4. Are enclosed documents listed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			5. Are listed documents enclosed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			FORM DC-1	
			6. Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			7. Complete? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			8. Accurate? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			TRAFFIC REPORT/CHAIN-OF-CUSTODY RECORD(s)	
			9. Signed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			10. Dated? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			AIRBILLS/AIRBILL STICKER	
			11. Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			12. Signed? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			13. Dated? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			SAMPLE TAGS	
			14. Does DC-1 list tags as being included? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			15. Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			OTHER DOCUMENTS	
			16. Complete? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			17. Legible? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	
			18. Original? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A	
			18a. If "NO", does the copy indicate where original documents are located? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A	

Over for additional comments.

Audited 
 Audited _____
 Signature

Linda Hoffman/ESAT Data Reviewer

 Printed Name/Title

Date 11/11/13
 Date _____

DC-2_

USEPA CLP Inorganics COC (REGION COPY)

Date Shipped: 9/16/2013

Carrier Name: FedEx

Airbill No: 7966 3717 7974

CHAIN OF CUSTODY RECORD

Falcon Refinery Superfund Site/TX

Case #: 43795

No: 6-091613-072656-0085

Lab: Spectrum Analytical, Inc. DBA: MITKEM
Laboratories

Lab Contact: Dawne Smart

Lab Phone: 401-732-3400

Inorganic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Organic Sample #	Sample Type
MF2B08	Soil/ David Werth	Grab	TM+HG(21)	6-451534 (Ice to 4C) (1)	TWB-08-0.0-0.5	09/14/2013 09:00		Field Sample
MF2B09	Soil/ David Werth	Grab	TM+HG(21)	6-451539 (Ice to 4C) (1)	TWB-08-0.5-2.0	09/14/2013 09:15		Field Sample
MF2B10	Soil/ David Werth	Grab	TM+HG(21)	6-451544 (Ice to 4C) (1)	TWB-08-2.0-5.0	09/14/2013 09:25		Field Sample
MF2B11	Soil/ David Werth	Grab	TM+HG(21)	6-451549 (Ice to 4C) (1)	TWB-09-0.0-0.5	09/14/2013 10:00		Field Sample
MF2B12	Soil/ David Werth	Grab	TM+HG(21)	6-451554 (Ice to 4C) (1)	TWB-09-0.0-0.5 Dup	09/14/2013 10:00		Field Duplicate
MF2B13	Soil/ David Werth	Grab	TM+HG(21)	6-451559 (Ice to 4C) (1)	TWB-09-0.5-2.0	09/14/2013 10:10		Field Sample
MF2B14	Soil/ David Werth	Grab	TM+HG(21)	6-451564 (Ice to 4C) (1)	TWB-09-2.0-5.0	09/14/2013 10:20		Field Sample
MF2B15	Soil/ David Werth	Grab	TM+HG(21)	6-451569 (Ice to 4C) (1)	TWB-10-0.0-0.5	09/14/2013 11:00		Field Sample
MF2B16	Soil/ David Werth	Grab	TM+HG(21)	6-451796 (Ice to 4C) (1)	TWB-10-0.5-2.0	09/14/2013 11:10		Field Sample
MF2B17	Soil/ David Werth	Grab	TM+HG(21)	6-451797 (Ice to 4C) (1)	TWB-10-2.0-5.0	09/14/2013 11:20		Field Sample

Special Instructions: ICP-AES for: Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium.

ICP-MS for: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: TM+HG=TM+Hg by ISM01.3, ICP-AES+MS

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	<i>[Signature]</i>	9-16-13	<i>[Signature]</i>	09-16-13	0800						
	<i>[Signature]</i>	9-16-13	<i>[Signature]</i>	09-16-13	0800						
	<i>[Signature]</i>	09-16-13									

page 9099

ADDENDUM

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
ND03	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF2B17, PBS60, MF2B16L
	Calcium MF2B17, PBS60
	Potassium MF2B16L, MF2B17
Blanks	ICP_AES
ND04	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated at CRQLs.
	MF2B17, PBS60, MF2B16L
	Calcium MF2B17, PBS60
	Potassium MF2B16L, MF2B17
Blanks	ICP_AES
ND05	The following samples have analyte results greater than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS60, MF2B16, MF2B16D, MF2B16L
	Calcium LCS60, MF2B16, MF2B16D, MF2B16L
	Potassium LCS60, MF2B16, MF2B16D
Blanks	ICP_AES
ND06	The following samples have analyte results greater than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS60, MF2B16, MF2B16D, MF2B16L
	Calcium LCS60, MF2B16, MF2B16D, MF2B16L
	Potassium LCS60, MF2B16, MF2B16D, MF2B16L
Blanks	ICP_AES
NE04	The following samples have analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF2B17
	Calcium MF2B17
Blanks	ICP_AES
NE05	The following samples have analyte results greater than CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
	LCS60, MF2B16, MF2B16D, MF2B16L
Calcium	LCS60 , MF2B16 , MF2B16D , MF2B16L

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_MS
ND03	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF2B17, MF2B16L, MF2B16, MF2B16D, PBS69
	Barium MF2B17
	Cobalt MF2B16L, MF2B17
	Beryllium MF2B16, MF2B16D, MF2B16L
	Antimony PBS69
	Thallium MF2B16
	Cadmium MF2B16, MF2B16D
	Silver MF2B16, MF2B16D, MF2B17
Blanks	ICP_MS
ND04	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated at CRQLs.
	MF2B16L, MF2B17, PBS69, MF2B16, MF2B16D
	Vanadium MF2B16L, MF2B17, PBS69
	Arsenic MF2B16L, MF2B17
	Barium MF2B17
	Cobalt MF2B16L, MF2B17
	Nickel MF2B17
	Beryllium MF2B16, MF2B16D, MF2B16L
	Antimony PBS69
	Thallium MF2B16
	Cadmium MF2B16, MF2B16D
	Copper MF2B16L, MF2B17
	Silver MF2B16, MF2B16D, MF2B17
Blanks	ICP_MS
ND05	The following samples have analyte results greater than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS69, MF2B16, MF2B16D, MF2B16S, MF2B16A, MF2B16L, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG, MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_MS
	Cobalt LCS69, MF2B16, MF2B16D, MF2B16S
	Barium LCS69, MF2B16, MF2B16A, MF2B16D, MF2B16L, MF2B16S
	Beryllium LCS69, MF2B16S
	Antimony LCS69, MF2B16A, MF2B16S
	Thallium LCS69, MF2B16S
	Cadmium LCS69, MF2B16S
	Silver LCS69, MF2B16S
	Lead LCS69, MF2B16, MF2B16D, MF2B16L, MF2B16S, MF2B17
Blanks	ICP_MS
ND06	The following samples have analyte results greater than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS69, MF2B16, MF2B16D, MF2B16L, MF2B16S, MF2B16A, MF2B17
	Vanadium LCS69, MF2B16, MF2B16D, MF2B16L, MF2B16S
	Cobalt LCS69, MF2B16, MF2B16D, MF2B16L, MF2B16S
	Barium LCS69, MF2B16, MF2B16A, MF2B16D, MF2B16L, MF2B16S
	Beryllium LCS69, MF2B16S
	Antimony LCS69, MF2B16A, MF2B16S
	Thallium LCS69, MF2B16S
	Cadmium LCS69, MF2B16S
	Silver LCS69, MF2B16S
	Lead LCS69, MF2B16, MF2B16D, MF2B16L, MF2B16S, MF2B17
Blanks	ICP_MS
NE05	The following samples have analyte results greater than CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS69, MF2B16, MF2B16D, MF2B16S, MF2B16A
	Vanadium LCS69, MF2B16, MF2B16D, MF2B16S
	Antimony LCS69, MF2B16A, MF2B16S

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM013

Data Review Reports

Detection Limit

Detection Limit	Hg
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF2B16, MF2B17
	Mercury MF2B16 , MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Detection Limit

Detection Limit	ICP_AES
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF2B16, MF2B16D, MF2B16L, MF2B17, PBS60
	Sodium MF2B16, MF2B16D, MF2B16L
	Calcium MF2B17, PBS60
	Potassium MF2B16L, MF2B17
	Magnesium MF2B16L, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM013

Data Review Reports

Detection Limit

Detection Limit	ICP_MS
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF2B16L, MF2B17, PBS69, MF2B16, MF2B16D
	Vanadium MF2B16L, MF2B17, PBS69
	Arsenic MF2B16L, MF2B17
	Chromium MF2B16L, MF2B17
	Barium MF2B17
	Cobalt MF2B16L, MF2B17
	Zinc MF2B17
	Nickel MF2B17
	Beryllium MF2B16, MF2B16D, MF2B16L
	Antimony PBS69
	Thallium MF2B16
	Cadmium MF2B16, MF2B16D
	Copper MF2B16L, MF2B17
	Silver MF2B16, MF2B16D, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Duplicates

Duplicates	ICP_AES
NI03	The following Duplicate and original sample results are greater than 5xCRQL and RPD is greater than 20. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Calcium MF2B16D

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM013

Data Review Reports

Duplicates

Duplicates	ICP_MS
NI03	The following Duplicate and original sample results are greater than 5xCRQL and RPD is greater than 20. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Barium MF2B16D
	Zinc MF2B16D
Duplicates	ICP_MS
NI04	The following Duplicate or original sample results are less than or equal to 5xCRQL and the absolute difference between duplicate and original samples are greater than CRQL. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Chromium MF2B16D
	Nickel MF2B16D

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Holding Times/Preservation

Holding Times/Preservation	Hg
NHT01	The following preserved samples are improperly maintained at temperatures outside the range of 4+/-2 C. Detected analytes with results greater than or equal to MDLs are qualified J-. Use professional judgment to qualify the nondetected analytes.
	MF2B16, MF2B16D, MF2B16S, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM013

Data Review Reports

Holding Times/Preservation

Holding Times/Preservation	ICP_AES
NHT01	The following preserved samples are improperly maintained at temperatures outside the range of 4+/-2 C. Detected analytes with results greater than or equal to MDLs are qualified J-. Use professional judgment to qualify the nondetected analytes.
	MF2B16, MF2B16D, MF2B16L, MF2B16S, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Holding Times/Preservation

Holding Times/Preservation	ICP_MS
NHT01	The following preserved samples are improperly maintained at temperatures outside the range of 4+/-2 C. Detected analytes with results greater than or equal to MDLs are qualified J-. Use professional judgment to qualify the nondetected analytes.
	MF2B16, MF2B16A, MF2B16D, MF2B16L, MF2B16S, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Matrix Spikes

Matrix Spikes	ICP_MS
NG08	The following Matrix Spike samples have percent recoveries less than 30% and post-digestion spike samples have percent recoveries greater than or equal to 75%. Detected analytes with results greater than or equal to MDLs are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Antimony MF2B16S
Matrix Spikes	ICP_MS
NG11	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries greater than or equal to 75%. Detected analytes with results greater than or equal to MDLs are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Barium MF2B16S

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Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Serial Dilution

Serial Dilution	ICP_MS
NL032	The following ICP-MS Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Nondetected analytes in samples are qualified UJ.
	MF2B16, MF2B17
	Vanadium MF2B16L
	Chromium MF2B16L

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
ND03	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF2B17, PBS60, MF2B16L
	Calcium MF2B17, PBS60
	Potassium MF2B16L, MF2B17
Blanks	ICP_AES
ND04	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated at CRQLs.
	MF2B17, PBS60, MF2B16L
	Calcium MF2B17, PBS60
	Potassium MF2B16L, MF2B17
Blanks	ICP_AES
ND05	The following samples have analyte results greater than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS60, MF2B16, MF2B16D, MF2B16L
	Calcium LCS60, MF2B16, MF2B16D, MF2B16L
	Potassium LCS60, MF2B16, MF2B16D
Blanks	ICP_AES
ND06	The following samples have analyte results greater than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS60, MF2B16, MF2B16D, MF2B16L
	Calcium LCS60, MF2B16, MF2B16D, MF2B16L
	Potassium LCS60, MF2B16, MF2B16D, MF2B16L
Blanks	ICP_AES
NE04	The following samples have analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF2B17
	Calcium MF2B17
Blanks	ICP_AES
NE05	The following samples have analyte results greater than CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Blanks

Blanks	ICP_AES
	LCS60, MF2B16, MF2B16D, MF2B16L
Calcium	LCS60 , MF2B16 , MF2B16D , MF2B16L

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Blanks

Blanks	ICP_MS
ND03	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated to CRQLs.
	MF2B17, MF2B16L, MF2B16, MF2B16D, PBS69
	Barium MF2B17
	Cobalt MF2B16L, MF2B17
	Beryllium MF2B16, MF2B16D, MF2B16L
	Antimony PBS69
	Thallium MF2B16
	Cadmium MF2B16, MF2B16D
	Silver MF2B16, MF2B16D, MF2B17
Blanks	ICP_MS
ND04	The following samples have analyte results greater than or equal to MDLs but less than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Nondetected analytes are not qualified. Sample results are elevated at CRQLs.
	MF2B16L, MF2B17, PBS69, MF2B16, MF2B16D
	Vanadium MF2B16L, MF2B17, PBS69
	Arsenic MF2B16L, MF2B17
	Barium MF2B17
	Cobalt MF2B16L, MF2B17
	Nickel MF2B17
	Beryllium MF2B16, MF2B16D, MF2B16L
	Antimony PBS69
	Thallium MF2B16
	Cadmium MF2B16, MF2B16D
	Copper MF2B16L, MF2B17
	Silver MF2B16, MF2B16D, MF2B17
Blanks	ICP_MS
ND05	The following samples have analyte results greater than CRQLs. The associated ICB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualified detected and nondetected analytes.
	LCS69, MF2B16, MF2B16D, MF2B16S, MF2B16A, MF2B16L, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Blanks

Blanks	ICP_MS
	Cobalt LCS69 , MF2B16 , MF2B16D , MF2B16S
	Barium LCS69 , MF2B16 , MF2B16A , MF2B16D , MF2B16L , MF2B16S
	Beryllium LCS69 , MF2B16S
	Antimony LCS69 , MF2B16A , MF2B16S
	Thallium LCS69 , MF2B16S
	Cadmium LCS69 , MF2B16S
	Silver LCS69 , MF2B16S
	Lead LCS69 , MF2B16 , MF2B16D , MF2B16L , MF2B16S , MF2B17
Blanks	ICP_MS
ND06	The following samples have analyte results greater than CRQLs. The associated CCB analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS69, MF2B16, MF2B16D, MF2B16L, MF2B16S, MF2B16A, MF2B17
	Vanadium LCS69 , MF2B16 , MF2B16D , MF2B16L , MF2B16S
	Cobalt LCS69 , MF2B16 , MF2B16D , MF2B16L , MF2B16S
	Barium LCS69 , MF2B16 , MF2B16A , MF2B16D , MF2B16L , MF2B16S
	Beryllium LCS69 , MF2B16S
	Antimony LCS69 , MF2B16A , MF2B16S
	Thallium LCS69 , MF2B16S
	Cadmium LCS69 , MF2B16S
	Silver LCS69 , MF2B16S
	Lead LCS69 , MF2B16 , MF2B16D , MF2B16L , MF2B16S , MF2B17
Blanks	ICP_MS
NE05	The following samples have analyte results greater than CRQLs. The associated preparation blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Use professional judgment to qualify detected and nondetected analytes.
	LCS69, MF2B16, MF2B16D, MF2B16S, MF2B16A
	Vanadium LCS69 , MF2B16 , MF2B16D , MF2B16S
	Antimony LCS69 , MF2B16A , MF2B16S

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Detection Limit

Detection Limit	Hg
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF2B16, MF2B17
	Mercury MF2B16 , MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories)
 SDG MF2B16
 Case 43795
 Contract EPW09039
 Region 6
 DDTID 183781
 SOW ISM01.3

Data Review Reports

Detection Limit

Detection Limit	ICP_AES
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF2B16, MF2B16D, MF2B16L, MF2B17, PBS60
	Sodium MF2B16 , MF2B16D , MF2B16L
	Calcium MF2B17 , PBS60
	Potassium MF2B16L , MF2B17
	Magnesium MF2B16L , MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Detection Limit

Detection Limit	ICP_MS
NDL1	The following samples have results greater than or equal to MDLs but less than CRQLs. Detected analytes are qualified J.
	MF2B16L, MF2B17, PBS69, MF2B16, MF2B16D
	Vanadium MF2B16L , MF2B17 , PBS69
	Arsenic MF2B16L , MF2B17
	Chromium MF2B16L , MF2B17
	Barium MF2B17
	Cobalt MF2B16L , MF2B17
	Zinc MF2B17
	Nickel MF2B17
	Beryllium MF2B16 , MF2B16D , MF2B16L
	Antimony PBS69
	Thallium MF2B16
	Cadmium MF2B16 , MF2B16D
	Copper MF2B16L , MF2B17
	Silver MF2B16 , MF2B16D , MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Duplicates

Duplicates	ICP_AES
NI03	The following Duplicate and original sample results are greater than 5xCRQL and RPD is greater than 20. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Calcium MF2B16D

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Duplicates

Duplicates	ICP_MS
NI03	The following Duplicate and original sample results are greater than 5xCRQL and RPD is greater than 20. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Barium MF2B16D
	Zinc MF2B16D
Duplicates	ICP_MS
NI04	The following Duplicate or original sample results are less than or equal to 5xCRQL and the absolute difference between duplicate and original samples are greater than CRQL. The original sample results are greater than or equal to MDLs. Detected analytes are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Chromium MF2B16D
	Nickel MF2B16D

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories)
 SDG MF2B16
 Case 43795
 Contract EPW09039
 Region 6
 DDTID 183781
 SOW ISM01.3

Data Review Reports

Holding Times/Preservation

Holding Times/Preservation	Hg
NHT01	The following preserved samples are improperly maintained at temperatures outside the range of 4+/-2 C. Detected analytes with results greater than or equal to MDLs are qualified J-. Use professional judgment to qualify the nondetected analytes.
	MF2B16, MF2B16D, MF2B16S, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories)
SDG MF2B16
Case 43795
Contract EPW09039
Region 6
DDTID 183781
SOW ISM01.3

Data Review Reports

Holding Times/Preservation

Holding Times/Preservation	ICP_AES
NHT01	The following preserved samples are improperly maintained at temperatures outside the range of 4+/-2 C. Detected analytes with results greater than or equal to MDLs are qualified J-. Use professional judgment to qualify the nondetected analytes.
	MF2B16, MF2B16D, MF2B16L, MF2B16S, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories)
 SDG MF2B16
 Case 43795
 Contract EPW09039
 Region 6
 DDTID 183781
 SOW ISM01.3

Data Review Reports

Holding Times/Preservation

Holding Times/Preservation	ICP_MS
NHT01	The following preserved samples are improperly maintained at temperatures outside the range of 4+/-2 C. Detected analytes with results greater than or equal to MDLs are qualified J-. Use professional judgment to qualify the nondetected analytes.
	MF2B16, MF2B16A, MF2B16D, MF2B16L, MF2B16S, MF2B17

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) SDG MF2B16 Case 43795 Contract EPW09039 Region 6 DDTID 183781 SOW ISM01.3

Data Review Reports

Matrix Spikes

Matrix Spikes	ICP_MS
NG08	The following Matrix Spike samples have percent recoveries less than 30% and post-digestion spike samples have percent recoveries greater than or equal to 75%. Detected analytes with results greater than or equal to MDLs are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Antimony MF2B16S
Matrix Spikes	ICP_MS
NG11	The following Matrix Spike samples have percent recoveries in the range of 30-74% and post-digestion spike samples have percent recoveries greater than or equal to 75%. Detected analytes with results greater than or equal to MDLs are qualified J. Nondetected analytes are qualified UJ.
	MF2B16, MF2B17
	Barium MF2B16S

National Functional Guidelines Report #03

Lab MITKEM(Mitkem Laboratories) **SDG** MF2B16 **Case** 43795 **Contract** EPW09039 **Region** 6 **DDTID** 183781 **SOW** ISM01.3

Data Review Reports

Serial Dilution

Serial Dilution	ICP_MS
NL032	The following ICP-MS Serial Dilution (SD) samples have percent difference (%D) greater than 10% and initial sample results are greater than 50xMDLs. The detected analytes in samples with results greater than or equal to MDLs are qualified J. Nondetected analytes in samples are qualified UJ.
	MF2B16, MF2B17
	Vanadium MF2B16L
	Chromium MF2B16L

CASE	SDG	EPASAMP	LABID	MATRIX	QCCODE	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	PRPDATE	LRDATE	LEVEL	PERSOLD	SMPWTVL	FINVOL	METHOD	STATLOC
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7429905	Aluminum	2880		mg/kg	17.7	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440360	Antimony	0.97	UJ	mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440382	Arsenic	0.64	J	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440393	Barium	121	J	mg/kg	4.9	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440417	Beryllium	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440439	Cadmium	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/01/2013	12:10:45	7440702	Calcium	61000	J	mg/kg	1330	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440473	Chromium	4.4	J	mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440484	Cobalt	1.3		mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440508	Copper	2.5		mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7439896	Iron	1720		mg/kg	8.8	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7439921	Lead	6.7		mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7439954	Magnesium	954		mg/kg	442	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7439965	Manganese	36.3		mg/kg	1.3	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/04/2013	10:19:51	7439976	Mercury	0.0046	LJ	mg/kg	0.095	09/14/2013	10/03/2013	09/17/2013	Low	95.9	0.55	100	CV	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440020	Nickel	3.0	J	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7440097	Potassium	550		mg/kg	442	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7782492	Selenium	2.4	U	mg/kg	2.4	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440224	Silver	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	09/30/2013	17:27:26	7440235	Sodium	442	U	mg/kg	442	09/14/2013	09/27/2013	09/17/2013	Low	95.9	1.18	100	P	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440280	Thallium	0.49	U	mg/kg	0.49	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440622	Vanadium	7.2		mg/kg	2.4	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B16	M1739-01A	S	Field_Sample	10/02/2013	10:39:44	7440666	Zinc	9.2		mg/kg	0.97	09/14/2013	10/01/2013	09/17/2013	Low	95.9	1.07	100	MS	TWB-10-0.5-2.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7429905	Aluminum	1120		mg/kg	18.6	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440360	Antimony	0.79	UJ	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440382	Arsenic	0.40	UJ	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440393	Barium	4.0	UJ	mg/kg	4.0	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440417	Beryllium	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440439	Cadmium	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7440702	Calcium	464	UJ	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440473	Chromium	0.36	LJ	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440484	Cobalt	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440508	Copper	0.79	U	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7439896	Iron	265		mg/kg	9.3	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7439921	Lead	1.7		mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7439954	Magnesium	40.7	LJ	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7439965	Manganese	3.3		mg/kg	1.4	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/04/2013	10:24:16	7439976	Mercury	0.011	LJ	mg/kg	0.098	09/14/2013	10/03/2013	09/17/2013	Low	96.1	0.53	100	CV	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440020	Nickel	0.40	UJ	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7440097	Potassium	464	U	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7782492	Selenium	2.0	U	mg/kg	2.0	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440224	Silver	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	09/30/2013	17:42:04	7440235	Sodium	464	U	mg/kg	464	09/14/2013	09/27/2013	09/17/2013	Low	96.1	1.12	100	P	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440280	Thallium	0.40	U	mg/kg	0.40	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440622	Vanadium	2.0	U	mg/kg	2.0	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0
43795	MF2B16	MF2B17	M1739-02A	S	Field_Sample	10/02/2013	10:58:48	7440666	Zinc	0.31	LJ	mg/kg	0.79	09/14/2013	10/01/2013	09/17/2013	Low	96.1	1.31	100	MS	TWB-10-2.0-5.0